

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)
(PCT Article 36 and Rule 70)

REC'D 23 FEB 2006
 WIPO PCT

Applicant's or agent's file reference 020305WO	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US2004/026349	International filing date (<i>day/month/year</i>) 12 August 2004	Priority date (<i>day/month/year</i>) 28 August 2003	
International Patent Classification (IPC) or national classification and IPC Int. Cl. H04L 25/02 (2006.01) and US CL: 375/350			
Applicant QUALCOMM INCORPORATED et al			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																
<p>4. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/> Box No. I	Basis of the report	<input type="checkbox"/> Box No. II	Priority	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/> Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/> Box No. VI	Certain documents cited	<input type="checkbox"/> Box No. VII	Certain defects in the international application	<input type="checkbox"/> Box No. VIII	Certain observations on the international application
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Date of submission of the demand 24 March 2005	Date of completion of this report 21 FEB 2006
Name and mailing address of the IPEA/AU Mail Stop PCT, Attn: ISA/US Commissioner for Patent: P. O. Box 1450, Alexandria, Virginia 22313-1450 FACSIMILE NO. 571-273-3201	Authorized Officer Blaine R. Copenheaver TELEPHONE NO. 571-272-7774

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US2004/026349

Box No. I Basis of the report

1. With regard to the language, this report is based on:

The international application in the language in which it was filed
 A translation of the international application into translation furnished for the purposes of:

international search (under Rules 12.3(a) and 23.1 (b))
 publication of the international application (under Rule 12.4(a))
 international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:

pages as originally filed/furnished
 pages* received by this Authority on with the letter of
 pages* received by this Authority on with the letter of

the claims:

pages as originally filed/furnished
 pages* as amended (together with any statement) under Article 19
 pages* received by this Authority on with the letter of
 pages* received by this Authority on with the letter of

the drawings:

pages as originally filed/furnished
 pages* received by this Authority on with the letter of
 pages* received by this Authority on with the letter of

a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. The amendments have resulted in the cancellation of:

the description, pages
 the claims, Nos.
 the drawings, sheets/figs
 the sequence listing (*specify*):
 any table(s) related to the sequence listing (*specify*):

4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages
 the claims, Nos.
 the drawings, sheets/figs
 the sequence listing (*specify*):
 any table(s) related to the sequence listing (*specify*):

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims 12-18, 30-36, 48-54	YES	
	Claims 1-11, 19-29, 37-47	NO	
Inventive step (IS)	Claims 12-18, 30-36, 48-54	YES	
	Claims 1-11, 19-29, 37-47	NO	
Industrial applicability (IA)	Claims 1-54	YES	
	Claims -	NO	
2. Citations and explanations (Rule 70.7)			
<p>The following documents are referred to in this communication:</p> <p>D1: WO 2002/005442 A2 (HARRIS CORP.) 17 January 2002</p> <p>D2: TENG JOON LIM: "Bias in CDMA channel estimates with the use of short spreading sequences" IEEE 6th Int. Symp. on Spread-Spectrum, NJ, USA, Vol. 1, 6 September 2000, pages 288-291, XP010517569</p>			
<p>INDEPENDENT CLAIMS 1, 19, 37</p> <p>The present application does not meet the criteria of Article 33(1) PCT, because the subject matter of claim 1 is not new in the sense of Article 33(2) PCT.</p> <p>Document D1 discloses (the references in parenthesis applying to this document): A method of estimating a communication channel impulse response $h(t)$, comprising the steps of: generating a data sequence d_i (six symbol dwell pattern mentioned on page 10 lines 5 to 34) having a constrained portion Cd_i (symbols d_1 to d_6) associated with at least two codes w_0, w_1 (in the case the pattern -1, -1, +1, +1 is used as symbols d_1 to d_6, as mentioned on figure 11), wherein a correlation $A_{code}(k)$ of the constrained portion Cd_i with one of the codes w_0, w_1 is characterized by a maximum value at $k=0$ less than maximum values at $k \neq 0$; generating a chip sequence c_j having a chip period T_c as the data sequence d_i spread by a spreading sequence S_i of length N (page 6, lines 16-18); generating $c_{m,t}(t) = c_{0,t}(t+mNT_c)$ for $m=0, 1, \dots, M$ by correlating a received signal $r(t)$ with the spreading sequence S_i, wherein the received signal $r(t)$ comprises the chip sequence c_j applied to the communication channel (page 7, lines 12-18); and generating an estimated communication channel impulse response $h_{est}(t)$ as a combination of $c_{m,t}(t)$ and d_m for $m=0, 1, \dots, M$ (page 10 lines 5 to 34).</p>			
<p>Therefore the subject matter of claim 1 is not new in the sense of Article 33(2) PCT.</p> <p>The same objection applies to independent claim 37, which is the corresponding claim in another category,</p> <p>(continued on supplemental box)</p>			

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

combined with the fact that the use of a correlator and estimator in Document D1 is implicit. Concerning claim 19, which contains all the features of claim 37, the same objection applies as well. Consequently, the subject matter of claims 19 and 37 is not new in the sense of Article 33(2) PCT.

DEPENDENT CLAIMS 2-11, 20-29, 38-47

Dependent claims 2-11, 20-29, 38-47 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).